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|  |                        |                       |
|--|------------------------|-----------------------|
| <b>TRANSMITTAL FORM</b><br><br><i>(to be used for all correspondence after initial filing)</i> | Application Number     | 09/458,322            |
|  | Filing Date            | December 10, 1999     |
|  | First Named Inventor   | Zack, Stephen Jeffrey |
|  | Art Unit               | 2611                  |
|  | Examiner Name          | Huynh, Son P.         |
| Total Number of Pages in This Submission   | Attorney Docket Number | 533/198 (TVG/198)     |

| ENCLOSURES (check all that apply)  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> Fee Transmittal Form<br><br><input checked="" type="checkbox"/> Fee Attached<br><br><input type="checkbox"/> Amendment / Reply<br><br><input type="checkbox"/> After Final<br><br><input type="checkbox"/> Affidavits/declaration(s)<br><br><input type="checkbox"/> Extension of Time Request<br><br><input type="checkbox"/> Express Abandonment Request<br><br><input type="checkbox"/> Information Disclosure Statement<br><br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><br><input type="checkbox"/> Response to Missing Parts/ Incomplete Application<br><br><input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s)<br><br><input type="checkbox"/> Licensing-related Papers<br><br><input type="checkbox"/> Petition<br><br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><br><input type="checkbox"/> Terminal Disclaimer<br><br><input type="checkbox"/> Request for Refund<br><br><input type="checkbox"/> CD, Number of CD(s) _____ | <input type="checkbox"/> After Allowance Communication to Technology Center (TC)<br><br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><br><input checked="" type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><br><input type="checkbox"/> Proprietary Information<br><br><input type="checkbox"/> Status Letter<br><br><input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):<br><br><b>Return Receipt Postcard</b> |
| <div>Remarks</div>   |  |  |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |                                      |
|--|--------------------------------------|
| Firm or Individual name                    | John M. Kelly, Esq., Reg. No. 33,920 |
| Signature                                  |                                      |
| Date                                       | September 10, 2004                   |

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| Typed or printed name   | Tara Carter |      |                    |
| Signature   |             | Date | September 10, 2004 |

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# FEE TRANSMITTAL for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☒ Applicant Claims small entity status. See 37 CFR 1.27

**TOTAL AMOUNT OF PAYMENT** (\$ ) 165

## Complete if Known

Application Number 09/458,322  
Filing Date 12/10/1999  
First Named Inventor Zack  
Examiner Name Huynh, Son P.  
Group / Art Unit 2611  
Attorney Docket No. 533/198 (TVG/198)

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money ☐ Other ☐ None  
Order

☒ Deposit Account

Deposit Account Number 20-0782

Deposit Account Name Moser, Patterson & Sheridan, LLP

The Director is authorized to: (Check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account

## FEE CALCULATION

### 1. BASIC FILING FEE

| Large | Entity | Small | Entity | Fee Code | Fee (\$) | Fee Code | Fee (\$) | Fee Description        | Fee Paid |
|-------|--------|-------|--------|----------|----------|----------|----------|------------------------|----------|
| 1001  | 770    | 2001  | 385    |          |          |          |          | Utility filing fee     |          |
| 1002  | 340    | 2002  | 170    |          |          |          |          | Design filing fee      |          |
| 1003  | 530    | 2003  | 265    |          |          |          |          | Plant filing fee       |          |
| 1004  | 770    | 2004  | 385    |          |          |          |          | Reissue filing fee     |          |
| 1005  | 160    | 2005  | 80     |          |          |          |          | Provisional filing fee |          |

**SUBTOTAL (1)**

### 2. EXTRA CLAIM FEES

|                       |                      |        | Extra<br>Claims |                                | Fee from<br>below |                      | Fee<br>Paid                      |
|-----------------------|----------------------|--------|-----------------|--------------------------------|-------------------|----------------------|----------------------------------|
| Total Claims          | <input type="text"/> | -20 ** | =               | <input type="text" value="0"/> | X                 | <input type="text"/> | = <input type="text" value="0"/> |
| Independent<br>Claims | <input type="text"/> | -3 **  | =               | <input type="text" value="0"/> | X                 | <input type="text"/> | = <input type="text" value="0"/> |
| Multiple<br>Dependent | 0                    |        |                 |                                | X                 | <input type="text"/> | = <input type="text" value="0"/> |

| Large | Entity | Small | Entity | Fee Code | Fee (\$) | Fee Code | Fee (\$) | Fee Description  |
|-------|--------|-------|--------|----------|----------|----------|----------|--|
| 1202  | 18     | 2202  | 9      |          |          |          |          | Claims in excess of 20                                     |
| 1201  | 86     | 2201  | 43     |          |          |          |          | Independent claims in excess of 3                          |
| 1203  | 290    | 2203  | 145    |          |          |          |          | Multiple dependent claim, if not paid                      |
| 1204  | 86     | 2204  | 43     |          |          |          |          | ** Reissue independent claims over original patent         |
| 1205  | 18     | 2205  | 9      |          |          |          |          | ** Reissue claims in excess of 20 and over original patent |

**SUBTOTAL (2)** (\$ ) 0

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

| Large | Entity | Small | Entity | Fee Code | Fee (\$) | Fee Code | Fee (\$) | Fee Description  | Fee Paid |
|-------|--------|-------|--------|----------|----------|----------|----------|--|----------|
| 1051  | 130    | 2051  | 65     |          |          |          |          | Surcharge - late filing fee or oath  |          |
| 1052  | 50     | 2052  | 25     |          |          |          |          | Surcharge - late provisional filing fee or cover sheet.                    |          |
| 1053  | 130    | 1053  | 130    |          |          |          |          | Non-English specification  |          |
| 1812  | 2,520  | 1812  | 2,520  |          |          |          |          | For filing a request for reexamination                                     |          |
| 1804  | 920*   | 1804  | 920*   |          |          |          |          | Requesting publication of SIR prior to Examiner action                     |          |
| 1805  | 1,840* | 1805  | 1,840* |          |          |          |          | Requesting publication of SIR after Examiner action                        |          |
| 1251  | 110    | 2251  | 55     |          |          |          |          | Extension for reply within first month                                     |          |
| 1252  | 420    | 2252  | 210    |          |          |          |          | Extension for reply within second month                                    |          |
| 1253  | 950    | 2253  | 475    |          |          |          |          | Extension for reply within third month                                     |          |
| 1254  | 1,480  | 2254  | 740    |          |          |          |          | Extension for reply within fourth month                                    |          |
| 1255  | 2,010  | 2255  | 1,005  |          |          |          |          | Extension for reply within fifth month                                     |          |
| 1401  | 330    | 2401  | 165    |          |          |          |          | Notice of Appeal   |          |
| 1402  | 330    | 2402  | 165    |          |          |          |          | Filing a brief in support of an appeal                                     | 165      |
| 1403  | 290    | 2403  | 145    |          |          |          |          | Request for oral hearing   |          |
| 1451  | 1,510  | 2451  | 1,510  |          |          |          |          | Petition to institute a public use proceeding                              |          |
| 1452  | 110    | 2452  | 55     |          |          |          |          | Petition to revive - unavoidable   |          |
| 1453  | 1,330  | 2453  | 665    |          |          |          |          | Petition to revive - unintentional   |          |
| 1501  | 1,330  | 2501  | 665    |          |          |          |          | Utility issue fee (or reissue)   |          |
| 1502  | 480    | 2502  | 240    |          |          |          |          | Design issue fee   |          |
| 1503  | 640    | 2503  | 320    |          |          |          |          | Plant issue fee  |          |
| 1460  | 130    | 1460  | 130    |          |          |          |          | Petitions to the Commissioner  |          |
| 1807  | 50     | 1807  | 50     |          |          |          |          | Processing fee under 37 CFR 1.17 (q)                                       |          |
| 1806  | 180    | 1806  | 180    |          |          |          |          | Submission of Information Disclosure Stmt                                  |          |
| 8021  | 40     | 8021  | 40     |          |          |          |          | Recording each patent assignment per property (times number of properties) |          |
| 1809  | 770    | 2809  | 385    |          |          |          |          | Filing a submission after final rejection (37 CFR § 1.129(a))              |          |
| 1810  | 770    | 2810  | 385    |          |          |          |          | For each additional invention to be examined (37 CFR § 1.129(b))           |          |
| 1801  | 770    | 2801  | 385    |          |          |          |          | Request for Continued Examination (RCE)                                    |          |
| 1802  | 900    | 1802  | 900    |          |          |          |          | Request for expedited examination of a design application                  |          |

Other fee (specify) \_\_\_\_\_

\*Reduced by Basic Filing Fee Paid

**SUBTOTAL (3)**

(\$ ) 165

## SUBMITTED BY

## Complete (if applicable)

Name (Print/Type) JOHN M. KELLY, Esq. Registration No. Attorney/Agent 33,920 Telephone 732-530-9404  
Signature *John M. Kelly* Date September 10, 2004

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SN 09/458,322

AF/2611  
3FW



IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicant: **Zack et al.**

Filed: **December 10, 1999**

Docket: **TVG/198**

Group Art Unit: **2611**

Serial No.: **09/458,322**

Examiner: **HUYNH, SON P.**

**Title: METHOD AND APPARATUS FOR PROVIDING IN-BAND MESSAGING WITHIN  
A VIDEO ON DEMAND ENVIRONMENT**

09/14/2004 GWORDOF1 00000044 200782 09458322

01 FC:2402 165.00 DA

BRIEF ON APPEAL

COMMISSIONER FOR PATENTS

Mail Stop: Appeal Brief-Patent

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

The following appeal brief is submitted pursuant to a Notice of Appeal mailed on September 2, 2004.

REAL PARTY IN INTEREST

The real party in interest is TVGateway, LLC, 1500 Market Street, 25th Floor, West Tower, Philadelphia, PA 19102. The assignment of the subject patent to TVGateway, LLC may not yet have been recorded in the U.S. Patent and Trademark Office.

RELATED APPEALS AND INTERFERENCES

No other appeals or interferences that directly affect, or are directly affected by, or have a bearing on the Board's decision in the pending appeal are known to Appellant's legal counsel.

### STATUS OF CLAIMS

Claims 32-44 are pending and stand rejected and claims 1-31 are withdrawn from consideration. The rejections of claims 32-44 are appealed.

### STATUS OF AMENDMENTS

A "RESPONSE UNDER 37 C.F.R. 1.116" was submitted on July 6, 2004. That Response was entered and an advisory action was mailed on August 26, 2004. Consequently all claim amendments have been entered.

### SUMMARY OF INVENTION

The subject invention relates to distributing messages and video signals from a content provider to subscribing customers. The content provider has server equipment that distributes the messages and the video signals. The subscribers have subscriber equipment that receives and displays the messages and the video signals. Reference Figure 1 and its supporting description found in the "Detailed Description" beginning on page 3 of the subject application.

The messages that are sent are referred to as non-content data, while the video signals that are sent are referred to as content data. Reference Figure 3 and its supporting description found in the "Detailed Description" beginning on page 13 of the subject application. The content data is typically video programming that is encoded in a standardized format, e.g., MPEG-2, and is usually sent over high speed channels that are referred to as "in-band" channels. Transmitting content data over an in-band channel is important because the in-band channels have the bandwidth necessary to transport the content data. Reference the "Description of the Background Art" beginning on page 1 of the subject application. In the prior art the non-content data is usually sent over out-of-band channels that have lower bandwidth capacity. Normally this is not a problem because since the non-content data does not have to be used in real-time the rate of transmission can be slow enough that the bandwidth capacity of an out-of-band channel is sufficient. Reference the "Description of the Background Art"

beginning on page 1 of the subject application.

However, in some applications, such as video-on-demand services, it may not be possible to utilize an out-of-band channel to send the non-content data. This can be because an out-of-band channel that services the complete distribution system may not exist or because of cost or other considerations. While it may be desirable to include non-content data, such as command and control information, within an in-band channel it is important that the non-content data not interfere with the content data. Reference the specification beginning on paragraph 2 of page 2 of the subject application.

The present invention addresses problems of sending both content and non-content data on the same channel. In particular, the present invention teaches merging the content data and the non-content data together within the server equipment. This is performed using a multiplexer that statistically multiplexes formatted content streams together and also selectively multiplexing non-content data with the formatted content streams. To do so, the non-content data is formatted in a multiplex switch and then is multiplexed with formatted non-content data on a bandwidth-availability basis.

For the convenience of the Board of Patent Appeals and Interferences, Appellants' claim 32 (the independent claim) is presented below.

32. In an information distribution system comprising server equipment for providing both content and non-content data to subscriber equipment, said server equipment comprising:

a multiplex switch for multiplexing a plurality of formatted content streams from server modules to produce an output stream that is adapted for transport via a communication channel, wherein said multiplexing of said formatted content streams is statistically performed; wherein said multiplex switch is further for formatting non-content data and for selectively multiplexing formatted non-content data into said output stream, and wherein said multiplexing of formatted non-content data is on a bandwidth availability basis that is predicted based on said multiplexing of said formatted content streams.

#### ISSUES

Whether claims 32-33, 36-41 and 43-44 are patentable under 35 U.S.C. §102(e) over Adams (U.S. Patent 6,044,396, issued March 28, 2000, hereinafter "Adams").

Whether claims 34-35 and 42 are patentable under 35 U.S.C. §103(a) over

Adams.

#### GROUPING OF CLAIMS

Claims 32-33, 36-41 and 43-44 should stand or fall together.

Claims 34-35 and 42 should stand or fall together.

#### THE REFERENCES

The following reference is relied on by the Examiner:

| Inventor | Document     | Date           |
|----------|--------------|----------------|
| Adams    | US 6,044,396 | March 28, 2000 |

#### BRIEF DESCRIPTION OF THE REFERENCE

Adams discloses a system for improving data transmissions over a constrained variable bit rate channel. By constrained, Adams means that the transmission channel has a limited bit rate capacity. By variable bit rate, Adams means that the transmission channel transmits signals at different bit rates, e.g., from zero (no transmission) up to the constraining bit rate limit, reference, for example, Adam's "Abstract." This is in contrast to transmission channels that use a fixed bit rate, i.e., channels that always send the same bit rate, reference the paragraph beginning on line 60 of column 1 of Adams.

Adams identifies a class of signals that have a high priority in that signals in that class must be sent as quickly as possible for acceptable performance. For example, video content must be sent at a rate high enough to avoid video defects. Adams also identifies a class of signals that can be delayed without causing unacceptable performance, e.g., application data used to control various features. If the application data is delayed slightly the consumer will not notice the delay. Reference the paragraph beginning on line 52 of column 4 of Adams.

To improve data transmission, Adams teaches sending high priority signals in a manner that fully utilizes the bandwidth capacity of the channel, e.g., sending video

content as fast as possible. The video content, which is comprised of multiple programs, is sent in a round-robin fashion. Then, when bandwidth capacity becomes available, e.g., no video content remains to send, the lower priority application data is sent. Reference the paragraph beginning on line 65 of column 4 of Adams.

Adams uses a series of buffers, specifically video buffers and an application buffer, to store data before sending. A multiplexer then selects data from the buffers to send. "If and when all of the video buffers are empty then a selector passes data from the application buffer to the output buffer. The selector will continue reading from the application buffer until data is detected in one or more of the video buffers. At that time, the selector will again read from the video buffers in a round-robin fashion." (See Adams column 4, line 52 to column 5, line 8; and Adams' FIG. 5). Thus Adams merely preferentially selects video data over application data when video data is available.

## ARGUMENTS

### REJECTION OF CLAIMS UNDER 35 U.S.C. §102

The Examiner rejected claims 32-33, 36-41 and 43-44 under 35 U.S.C. 102(e) as being anticipated by Adams (U.S. Patent 6,044,396, issued March 28, 2000, hereinafter "Adams"). It is submitted that claims 32-44 are allowable when Adams and those claims are properly understood.

Independent claims 32 and 40, and their dependent claims 33-39 and 41-44 are allowable at least because one of their features relates to formatting non-content data, and subsequently multiplexing the formatted non-content data on a bandwidth availability basis. Specifically, the subject applications independent claims recite:

32. "In an information distribution system comprising server equipment for providing both content and non-content data to subscriber equipment, said server equipment comprising:  
a multiplex switch for multiplexing a plurality of formatted content streams from server modules to produce an output stream that is adapted for transport via a communication channel, wherein said multiplexing of said formatted content streams is statistically performed;  
wherein said multiplex switch is further for formatting non-content data

and for selectively multiplexing formatted non-content data into said output stream, and wherein said multiplexing of formatted non-content data is on a bandwidth availability basis that is predicted based on said multiplexing of said formatted content streams." (Emphasis added)

40. "A method of providing content and non-content data to subscriber comprising the steps of:  
statistically multiplexing a plurality of formatted content streams to produce an output stream that is adapted for transport via a communication channel;  
formatting non-content data to fit the output stream;  
predicting bandwidth availability based on the statistical multiplexing of the formatted content streams; and  
selectively multiplexing formatted non-content data into said output stream on a bandwidth availability basis." (Emphasis added).

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim" (Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 730 F.2d 1452, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984) (citing Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 U.S.P.Q. 193 (Fed. Cir. 1983)) (emphasis added). Adams fails to disclose each and every element of the claimed invention, as arranged in the claims.

As described above, Adams teaches a system in which multiple encoded information streams (e.g., video content) and a secondary information stream (e.g., non-content data) are transmitted over a constrained (maximum) variable bit rate system. To do so, the encoded information streams and the secondary information stream are multiplexed together using preferential multiplexing in which the secondary information stream has a lower transmission priority than the encoded information streams. The multiplexer selectively multiplexes the encoded information streams using a round-robin selection scheme to fulfill the maximum bit rate capacity of the system. When the encoded information streams do not utilize the bit rate capacity of the system (e.g., when no encoded information remains to be sent) the multiplexer then multiplexes the secondary information stream into the transmission channel. Thus, the transmission rate of the secondary information stream is controlled such that the encoded information streams are given priority.



A significant difference between Adams and the pending claims is that the pending recite that the non-content data is formatted for transmission. This feature is completely lacking in Adams. That formatting non-content data for transmission is not taught in Adams is acknowledged by the Examiner, reference the August 26, 2004 Advisory Action, page 2, where the Examiner states, "Clearly, the non-content stream (application data) has to be formatted (e.g., in the form of an MPEG-2)." The Examiner does not explain why the non-content stream has to be formatted, nor is it particularly obvious why it has to be. Adams does not suggest doing so, and such formatting is not necessary to the Adams arrangement. Therefore, it cannot be said that the formatting are recited in the pending claims is inherent in Adams.

The Advisory Action also cites numerous patents in which data is formatted in a multiplexer. However many patents may disclose formatting data in a multiplexer is not particularly relevant since the Applicants has no need to contest that such is known. The Applicant does not claim to have invented formatting. It is the formatting of non-content (application) data in a multiplex switch that statistically multiplexes formatted content streams to produce an output stream that is adapted for transport on a communication channel as recited in independent claims 32 and 40 that the Applicants assert is not known in the prior art, is not obvious over the prior art, but is beneficial.

As claims 33-39 and 43-44 depend from allowable base claims those claims are also allowable. Consequently, the Applicants request the Board of Appeals to overturn the rejection of claims 32-44 and to allow the subject application.

#### **REJECTION OF CLAIMS UNDER 35 U.S.C. §103**

The Examiner rejected claims 34-35 and 42 under 35 U.S.C. 103(a) as being unpatentable over Adams. It is submitted that claims 34-35 and 42 are allowable when Adams and those claims are properly understood.

Adams has been described above and for brevity that description will not be repeated.

Rejected claims 34-35 and 42 recite the limitations of independent claims 32 and 40 and are allowable for the reasons presented above. Consequently, the Applicants

request the Board of Appeals to overturn the rejection of claims 34-35 and 42 and to allow the subject application.

Dependent claims 34-35 and 42 should additionally be found allowable as they recite limitations related to time extents that are not taught or suggested in Adams.

For the convenience of the Board of Appeals, claim 34, a representative claim of the claims rejected under 35 U.S.C. 103(a), and claim 33 from which it depends, provide:

33. The server equipment of claim 32, wherein said multiplex switch includes a buffer for storing non-content data and a switch controller for determining a bandwidth utilization level of said multiplex switch, said switch controller further for causing at least a portion of said non-content data in said buffer to be multiplexed into said output stream when said bandwidth utilization level falls below a threshold utilization bandwidth level.

34. The server equipment of claim 33, wherein said threshold bandwidth utilization level comprises a utilization level sufficient to process a single time extent, wherein said content streams are divided into a plurality of respective time extents. (Emphasis added).

The subject application relates a time extent to, illustratively, a service period of output from a memory device such as a disk drive array (reference the text beginning on page 8, line 15 through page 9, line 20 of the subject application). See also elements 110 (disk arrays) shown in Figure 2 and its associated text. Thus a time extent represents a fixed amount of data, with that amount depending on the memory device. Adams does not discuss or disclose the idea of a time extent.

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494 496 (C.C.P.A. 1970), M.P.E.P. 2143.03. Moreover, the mere fact that a prior art structure could be modified to produce the claimed invention would not have made the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992); *In re Gordon*, 221

U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

With respect to claim 34, the Examiner contends that "Adams does not specifically disclose the threshold bandwidth utilization level comprises a utilization level sufficient to process a single time extent, wherein the content streams are divided into a plurality of respective time extents." That is, the Examiner notes that Adams fails to disclose the following two elements:

- (1) Dividing content streams into a plurality of respective time extents; and
- 2) a threshold bandwidth utilization level comprising a utilization level sufficient to process a single time extent.

In spite of this glaring omission in the teachings of Adams, the Examiner contends that somehow it is obvious to one of ordinary skill in the art that "the threshold bandwidth utilization level comprises a utilization level sufficient to process a single time extent, wherein the content streams are divided into a plurality of respective time extents in order to reduce delay in real-time data transmission [to] thereby improve efficiency in quality of service." The applicants strongly disagree with this contention.

The Examiner is using improper hindsight in conjunction with what amounts to an unsupported Official Notice that these two critical and claimed elements are somehow known to those skilled in the art. There is also no inherent need for this structure within the Adams arrangement.

The Examiner has failed to support the position taken and, equally important, has improperly imputed qualities to the prior art that simply do not exist. Specifically, the applicants do not understand the term "improved efficiency in quality of service" Quality of service (QoS) pertains to, literally, the quality of a service provided as defined by bit rate, reduced jitter or delay, minimum bandwidth and/or other parameters. QoS is not an efficiency measurement; rather, it is a performance measurement. Thus, in addition to improperly imputing characteristics to the prior art that allegedly render the claimed invention obvious, the Examiner also offers an improper reason for such re-characterization of the prior art. Accordingly, the Applicants strongly disagree with the rejections pertaining to claim 34.

With respect to claim 35, the Examiner admits that "Adams teaches a system as

discussed in the rejection of claim 33 ...." The applicants strongly disagree as discussed above. In fact, the Examiner admits that "Adams does not specifically disclose each of the content streams as divided into a plurality of respective time extents, and the multiplex switch can multiplex a predetermined number of time extents into the output stream." However, just as discussed above with respect to claim 34, the Examiner waves his hand and simply contends that the invention of claim 35 is somehow known to those of ordinary skill in the art. Again, the Examiner makes the assumption that even though two of the claimed elements are admittedly not disclosed by Adams, somehow one of ordinary skill in the art would know to apply these elements in the claimed manner. Further, the Examiner contends that the motivation for such a combination is to "improve efficiency in data transmission."

The applicants strongly disagree with the Examiner's improper use of hindsight and the teachings of the claimed invention to somehow construe that multiple elements not disclosed in the prior art are somehow obvious, and that the claims are not patentable therefore. This is a totally improper twisting of the teachings of the prior art, augmented by improper assumptions about what is in fact obvious to one of ordinary skill in the art (assumptions not supported in any manner by the Examiner) to somehow arrive at the claimed invention. The relevant limitations in claim 35 (as with claim 34) are not explicitly or implicitly provided in Adams, are not inherent, and are not even contemplated without using improper hindsight.

As claims 34-35 and 42 recite time extents, and as Adams does not suggest time extents, claims 34-35 and 42 are allowable. Consequently, the Applicants request the Board of Appeals to overturn the rejection of claims 34-35 and 42 and to allow the subject application.

### **CONCLUSION**

For the reasons advanced above, Appellant respectfully urges that claims 32-44 are patentable. Reversal of all rejections is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. If necessary, please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit

SN 09/458,322

Account 20-0782 and please credit any excess fees to such deposit account.

Sep 10, 2004

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## **APPENDIX OF CLAIMS INVOLVED IN APPEAL**

32. In an information distribution system comprising server equipment for providing both content and non-content data to subscriber equipment, said server equipment comprising:

a multiplex switch for multiplexing a plurality of formatted content streams from server modules to produce an output stream that is adapted for transport via a communication channel, wherein said multiplexing of said formatted content streams is statistically performed; wherein said multiplex switch is further for formatting non-content data and for selectively multiplexing formatted non-content data into said output stream, and wherein said multiplexing of formatted non-content data is on a bandwidth availability basis that is predicted based on said multiplexing of said formatted content streams.

33. The server equipment of claim 32, wherein said multiplex switch includes a buffer for storing non-content data and a switch controller for determining a bandwidth utilization level of said multiplex switch, said switch controller further for causing at least a portion of said non-content data in said buffer to be multiplexed into said output stream when said bandwidth utilization level falls below a threshold utilization bandwidth level.

34. The server equipment of claim 33, wherein said threshold bandwidth utilization level comprises a utilization level sufficient to process a single time extent, wherein said content streams are divided into a plurality of respective time extents.

35. The server equipment of claim 33, wherein each of said content streams is divided into a plurality of respective time extents, and wherein said multiplex switch can multiplex a predefined number of time extents into said output stream.

36. The server equipment of claim 32, wherein said non-content data

comprises control data and non-control data, and wherein said multiplex switch preferentially multiplexes said non-control data.

37. The server equipment of claim 32, wherein said non-content data comprises control data and non-control data, and wherein said multiplex switch preferentially multiplexes control data.

38. The server equipment of claim 32, wherein said content data includes MPEG data.

39. The server equipment of claim 32, wherein said non-content data includes internet protocol data.

40. A method of providing content and non-content data to subscriber comprising the steps of:

- statistically multiplexing a plurality of formatted content streams to produce an output stream that is adapted for transport via a communication channel;

- formatting non-content data to fit the output stream;

- predicting bandwidth availability based on the statistical multiplexing of the formatted content streams; and

- selectively multiplexing formatted non-content data into said output stream on a bandwidth availability basis.

41. The method of claim 40 further including storing non-content data until bandwidth availability enables multiplexing of the stored non-content data.

42. The method of claim 40, further including dividing content streams into a plurality of respective time extents that are multiplexed a predefined number at a time into the output stream.

43. The method of claim 40 wherein the output stream is an MPEG data stream.
44. The method of claim 40 further including receiving the non-content data in an internet protocol format.